INFORMATION REPORT INFORMATION REPORT

CENTRAL INTELLIGENCE AGENCY

S-E-C-R-E-T

25X1

COUNTRY Hungary

REPORT

SUBJECT Explosives Factory at Füzfögyartelep: Research Laboratory Work on Explosives, Silicones, Agricultural Chemicals, and others.

DATE DISTR. 4 FEB 19[redacted]

NO. PAGES 1

REFERENCES RD

25X1

DATE OF INFO.

PLACE & DATE ACQ.

25X1

SOURCE EVALUATIONS ARE DEFINITIVE. APPRAISAL OF CONTENT IS TENTATIVE.

1. [redacted] a report with copies [redacted] concerning research laboratory work at the explosives factory in Füzfögyartelep. The report gives information on the following types of research being done at the laboratory of the factory at an unspecified time [redacted]

   a. Stability tests on explosives; aimed detonation (gerichte detonatie) tests, development of a method of preparing hexogen and a procedure for the continuous mixing of guncotton and nitroglycerine which would eliminate the calendering of smokeless powder. 25X1

   b. Work on silicones, aminoplasts, the polymerization process of the methylmetraacrylate monomer, weed-killers and a detergent which was to resemble the Mersolaat of VEB Leunawerke "Walter Ulbricht", Leuna, in East Germany.

2. The value of this report is diminished by the fact that no date of information was provided, while the only references in the report itself are to very early dates: the employment of a method for testing explosives which has been used "since 1940" and the changing over "after 1951" to work on other types of research than that on explosives.

[redacted] 25X1

S-E-C-R-E-T

[redacted] 25X1

STATE	X ARMY	X NAVY	X AIR	X FBI	AEC				

(Note: Washington distribution indicated by "X"; Field distribution by "#".)

INFORMATION REPORT INFORMATION REPORT

25X1

Next 1 Page(s) In Document Denied

S E C R E T

25X1

Technical and Scientific

Country and Subject: Hungary; Explosives Factory in Füzfogyartelep

Research at the laboratory was chiefly occupied with the further development of silicones. This included the following:

1. Surface-protective substances
2. Oils, including electrical-insulating oils
3. Rubber
4. Silicone ~~sheets~~ varnish

The laboratory also worked on weed-exterminating mixtures and their composition and the technology or method of ~~artificial~~ preparation of these.

A rather small group was occupied with explosives. The plan was to work out methods of perforating steel tubes in oil sources (oil wells) with the help of explosives.

The Central Laboratory for Explosives was ~~to be set up~~ at Füzfogyartelep, close to the factory. The plans for this, however, were still very vague.

the following:

A. Explosives, including smokeless powder and pyrotechnical material.

1. Tests with explosives.
   Most of the research work was carried out in regard to the so-called stability tests. A method was worked out for the testing of explosives at various temperatures in smelted-off glass tubes. This method has been applied since 1940 and is suited for long-lasting tests of the most diverse types of explosives at relatively low temperatures.
2. Other general methods were also used. Among others, there was a method, used for at least the last ten years, of testing under conditions which were, as far as possible, adiabetic conditions (conditions under which the material or thing being tested or changed is not involved in any transfer of heat with its surroundings); this method resembled mainly the old Silvered Vessel Test.
3. Since WWII a good deal of work was done on directed detonation, i.e., according to the principle of the well-known bazooka grenades, or what is now called "jet-shooting." Methods depending upon this principle were worked out for the perforating of steel tubes in

S E C R E T

oil sources [wells], by cutting them in two underground.

3. Also worked out in the laboratory was a continuous process for the manufacturing of the explosive Tetra-nitre-penta-eretrite; this method of preparation worked satisfactorily for years. The same is true for Tetryl.
The laboratory also worked out a method of preparing hexogen and a procedure for the continuous mixing of gun-cotton and nitroglycerine, a process by which the researchers sought to eliminate the calendering of smokeless powder.

B. Synthetics and Similar Materials
After 1951 the factory was gradually changed over to work other than that on explosives.

1. Silicones.
A continuous process was worked out in the laboratory for the preparation of $SiCl_4$, proceeding from Ferrosilicon and depending on the so-called fluid-bed method.
At the same time, but in a completely different way, they worked on a somewhat similar process for the preparation of $TiCl_4$, proceeding from pure Titanium white powder. This process was worked out to the extent that, by half-technical criteria, it is already built up.
As the following step in making silicones, they constructed, by half-technical criteria, a continuous conversion of $SiCl_4$ with alcohol to Tetra alkoxy silanes [original says "silanen"; no similar word in any dictionaries], together with a continuous vacuum film-column to distill off the pure monomer.
They also began to use an apparatus of 20-liter capacity for the conversion of the monomer into alkyl-alkoxy silanes with the help of the Grignard reaction without ether, after this reaction had been extensively studied in the laboratory. Following this, a process was developed for the separation of the Grignard salt from the reaction-products by continuously distilling the latter off from the salt.
Also in connection with silicones there was work on the following: fine fractioning of the silanes, recovery of alcohol from the Grignard salt, condensation of alkoxy-silanes to silicones, preparation of chlorosilanes, etc.

2. Amineplasts. They worked on the preparation of a porous insulation material on the basis of formaldehyde carbamid condensate.

3. In the laboratory a simple method was worked out for dilatrometric research into the polymerization process of the methylmetacrylate monomer.

4. In the area of plant-protective substances, they were occupied with the development of a good DDT preparation as well as of a 24D weed-killer. In connection with the latter there was laboratory work in chlorinizing phenol in a film-reactor and in the preparation of monochloracetic acid.

5. Tests were made in the laboratory on the sulfochlorinizing of a very

paraffin-rich oil fraction, in order to fabricate a detergent substance resembling the Mersolaat of Leunawerke. This sulfochlorinization was to be carried out continuously in a modern turbulent film apparatus.

#

SECRET

25X1

Technical and Scientific

Country and Subject: Hungary; Explosives Factory in Füzfögyartelep

Research at the laboratory [redacted] was chiefly occupied with the further development of silicones. This included the following: 25X1

1. Surface-protective substances
2. Oils, including electrical-insulating oils
3. Rubber
4. Silicone sheets varnish

The laboratory also worked on weed-exterminating mixtures and their composition and the technology or method of artificial preparation of these.

A rather small group was occupied with explosives. The plan was to work out methods of perforating steel tubes in oil sources (oil wells) with the help of explosives.

The Central Laboratory for Explosives was to be at Füzfögyartelep, close to the factory. The plans for this, however, were still very vague.

[redacted] the following: 25X1

A. Explosives, including smokeless powder and pyrotechnical material.
   1. Tests with explosives.
      Most of the research work was carried out in regard to the so-called stability tests. A method was worked out for the testing of explosives at various temperatures in smelted-off glass tubes. This method has been applied since 1940 and is suited for long-lasting tests of the most diverse types of explosives at relatively low temperatures.
   2. Other general methods were also used. Among others, there was a method, used for at least the last ten years, of testing under conditions which were, as far as possible, adiabetic [illegible] conditions / conditions under which the material or thing being tested or changed is not involved in any transfer of heat with its surroundings /; this method resembled mainly the old [redacted] Silvered Vessel Test. 25X1
   3. Since WWII a good deal of work was done on directed detonation, i.e., according to the principle of the well-known bazooka grenades, or what is now called "jet-shooting." Methods depending upon this principle were worked out for the perforating of steel tubes in oil sources /

SECRET

oil sources [wells], by cutting them in two underground.

3. Also worked out in the laboratory was a continuous process for the manufacturing of the explosive Tetra-nitro-penta-erytrite; this method of preparation worked satisfactorily for years. The same is true for Tetryl.
The laboratory also worked out a method of preparing hexogen and a procedure for the continuous mixing of gun-cotton and nitroglycerine, a process by which the researchers sought to eliminate the calendering of smokeless powder.

B. Synthetics and Similar Materials
After 1951 the factory was gradually changed over to work other than that on explosives.

1. Silicones.
A continuous process was worked out in the laboratory for the preparation of $SiCl_4$, proceeding from Ferrosilicon and depending on the so-called fluid-bed method.
At the same time, but in a completely different way, they worked on a somewhat similar process for the preparation of $TiCl_4$, proceeding from pure Titanium white powder. This process was worked out to the extent that, by half-technical criteria, it is already built up.
As the following step in making silicones, they constructed, by half-technical criteria, a continuous [illegible] conversion of $SiCl_4$ with alcohol to Tetra alkoxy silanes [original says "silanen"; no similar word in any dictionaries], together with a continuous vacuum film-column to distill off the pure monomer.
They also began to use an apparatus of 20-liter capacity for the conversion of the monomer into alkyl-alkoxy silanes with the help of the Grignard reaction without ether, after this reaction had been [illegible] extensively studied in the laboratory. Following this, a process was developed for the separation of the Grignard salt from the reaction-products by [illegible] continuously distilling the latter off from the salt.
Also in connection with silicones there was work on the following: fine fractioning of the silanes, recovery of alcohol from the Grignard salt, condensation of alkoxy-silanes to silicones, preparation of chlorosilanes, etc.

2. Aminoplasts. They worked on the preparation of a porous insulation material on the basis of formaldehyde carbamid condensate.

3. In the laboratory a simple method was worked out for dilatrometric research into the polymerization process of the methylmetacrylate monomer.

4. In the area of plant-protective substances, they were occupied with the development of a good DDT preparation as well as of a 2,4D weed-killer. In connection with the latter there was laboratory work in chlorinising phenol in a film-reactor and in the preparation of monochloracetic acid.

5. Tests were made in the laboratory on the sulfochlorinising of a very

paraffin-rich oil fraction, in order to fabricate a detergent substance resembling the Marsolant of Leunawerke. This [redacted] sulfochlorination was to be carried out continuously in a modern turbulent film apparatus.

#

SECRET

25X1

Technical and Scientific

Country and Subject: Hungary; Explosives Factory in Füzfögyartelep

Research at the laboratory [redacted] was chiefly occupied with the further development of silicones. This included the following: 25X1

1. Surface-protective substances
2. Oils, including electrical-insulating oils
3. Rubber
4. Silicone sheets varnish

The laboratory also worked on ~~xxxx~~ weed-exterminating mixtures and their composition and the technology or method of artificial preparation of these.

A rather small group was occupied with explosives. The plan was to work out methods of perforating steel tubes in oil sources (oil wells) with the help of explosives.

The Central Laboratory for Explosives ~~was to be set up~~ at Füzfögyartelep, ~~xxxx~~ close to the factory. The plans for this, however, were still very vague.

[redacted] the following: 25X1

A. Explosives, including smokeless powder and pyrotechnical material.
   1. Tests with explosives.
      Most of the research work was carried out in regard to the so-called stability tests. A method was worked out for the testing of explosives at various temperatures in smelted-off glass tubes. This method has been applied since 1940 and is suited for ~~xx~~ long-lasting tests of the most diverse types of explosives at relatively low temperatures.
   2. Other general methods were also used. Among others, there was a method, used for at least the last ten years, of testing under conditions which were, as far as possible, adiabetic ~~xx~~ conditions / conditions under which the material or thing being tested or changed is not involved in any transfer of heat with its surroundings /; this method resembled mainly the old [redacted] Silvered Vessel Test. 25X1
   3. Since WWII a good deal of work was done on directed detonation, i.e., according to the principle of the well-known bazooka grenades, or what is now called "jet-shooting." Methods depending upon this ~~principle~~ worked out for the perforating of steel tubes in oil sources /

SECRET

oil sources [wells], by cutting them in two underground.

3. Also worked out in the laboratory was a continuous process for the manufacturing of the explosive Tetra-nitro-penta-erytrite; this method of preparation worked satisfactorily for years. The same is true for Tetryl.
The laboratory also worked out a method of preparing hexogen and a procedure for the continuous mixing of gun-cotton and nitroglycerine, a process by which the researchers sought to eliminate the calendering of smokeless powder.

B. Synthetics and Similar Materials
After 1951 the factory was gradually changed over to work other than that on explosives.

1. Siliconen.
A continuous process was worked out in the laboratory for the preparation of $SiCl_4$, proceeding from Ferrosilicon and depending on the so-called fluid-bed method.
At the same time, but in a completely different way, they worked on a somewhat similar process for the preparation of $TiCl_4$, proceeding from pure Titanium white powder. This process was worked out to the extent that, by half-technical criteria, it is already built up.
As the following step in making siliconen, they constructed, by half-technical criteria, a continuous [illegible] conversion of $SiCl_4$ with alcohol to Tetra alkoxy silanes [original says "silanen"; no similar word in any dictionaries], together with a continuous vacuum film-column to distill off the pure monomer.
They also began to use an apparatus of 20-liter capacity for the conversion of the monomer into alkyl-alkoxy silanes with the help of the Grignard reaction without ether, after this reaction had been extensively studied in the laboratory. Following this, a process was developed for the separation of the Grignard salt from the reaction-products by continuously distilling the latter off from the salt.
Also in connection with siliconen there was work on the following: fine fractioning of the silanes, recovery of alcohol from the Grignard salt, condensation of alkoxy-silanes to siliconen, preparation of chlorosilanes, etc.

2. Aminoplasts. They worked on the preparation of a porous insulation material on the basis of formaldehyde carbamid condensate.

3. In the laboratory a simple method was worked out for dilatrometric research into the polymerization process of the methylmetacrylate monomer.

4. In the area of plant-protective substances, they were occupied with the development of a good DDT preparation as well as of a 2,4D weed-killer. In connection with the latter there was laboratory work in chlorinising phenol in a film-reactor and in the preparation of monochloracetic acid.

5. Tests were made in the laboratory on the sulfochlorinising of a very

paraffin-rich oil fraction, in order to fabricate a detergent substance resembling the Mersolast of Leunawerke. This [redacted] sulfochlorination was to be carried out continuously in a modern turbulent film apparatus.

#